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ABSTRACT

The purpose of this document is to provide a guide for education technology planning. A state educational technology plan is a written strategy that outlines the way a state proposes to integrate educational technology into its overall educational goals. The report has been divided into three categories: preparing, writing, and evaluating. Stage One covers preparation of the plan including the strategic vision, goals and objectives, needs assessment, scope, political issues, defining stakeholders, organizational stakeholders, model schools, funding, equity, staff development, and vendors and outside consultants. Stage Two identifies these key elements in the written plan: vision, mission statement, goals and objectives, strategy, scope, training and staffing requirements, evaluation criteria, technical standards, cost estimates, timeline, glossary of terms, and upgrading, maintenance, and obsolescence strategies. Stage Three examines the evaluation component of the plan. A summary includes tips from the experts in state educational technology planning. Also provided are a checklist and a list of resources to aid in the planning process. (JLB)

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The Key Elements of Effective State Planning for Educational Technology

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The Key Elements of Effective State Planning for Educational Technology

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SREB

Southern Regional Education Board

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This document, prepared for the BellSouth TechKNOWLEDGEy '93: Pathways to Progress Conference, *is a collaborative effort among the Southern Regional Education Board, BellSouth, and three experienced state educational technology planners. Its purpose is to guide the efforts of those involved in state educational technology planning.*

This paper was first published by BellSouth under the title The Key Elements of Effective State Educational Technology Planning, *and has been reprinted by SREB for distribution to a larger audience. The content of the paper has not changed.*

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Introduction

The world is changing. What our children must learn to become productive members of society, both today and in the 21st century, differs vastly — not only from what our parents needed to know, but also from what we need to know. Today, more than ever before, educators are looking for new tools that will enable them to keep pace with change and teach more effectively. Technology is one such tool.

Since the integration of technology and education is relatively new, educators seldom have access to a strategic planning guide. To fill this void, the Southern Regional Education Board and BellSouth have joined forces to produce a document that will serve as a guide to education technology planning. It is meant to provoke thought and identify questions — not to specifically define planning activities. You are the best judge of what will succeed in your state and what will not.

A *state educational technology plan* is a written strategy that outlines the way a state proposes to integrate educational technology into its overall education goals. It is not merely a "vision statement." It is a call to action.

Planning is critical if technology is to have a positive impact on education, but the job of technology planning is becoming more and more challenging. How can planners be effective in a constantly changing environment? What variables should be considered when developing an educational technology plan? What problems have planners faced in the past? How were these problems overcome? What barriers are planners likely to face in the future?

These are the questions we sought to answer when we asked three experienced state educational technology planners to help define key components of educational technology planning. Their ideas — arranged into the categories of Preparing, Writing, and Evaluating — form the foundation for this report.

This guide has been prepared primarily for those involved in state educational technology planning. It also should be helpful to anyone with an interest in — or influence over — the future development of education and technology.

It is important that you remember throughout this process that flexibility is a key to successful planning. You can expect to see changes in the technology industry and the education environment. Therefore, to remain effective your plan must have the built-in flexibility to change with the complex environment in which it must function.

Throughout this report, *educational technology* refers to any electronic and information technology used to support or aid teaching and learning. This might include, for example, a fiber-optic-based Distance Learning network, instructional courseware, or a telephone in a teacher's classroom.

STAGE ONE: PREPARING

The preparation for planning can be as important as planning itself. A major mistake is to start the planning process before all the major ingredients are in place. No ingredient is more critical than the strategic vision.

- ***STRATEGIC VISION: What is your vision, how will you achieve it, and how will you paint the picture for the public?***

The use of technology in education is foreign to most of the public, including some public officials who have the power to approve or reject your plan. Your ability to create a vision and communicate that vision to the public will be important. You must show the public what education will look like after the technology is in place. You must describe to the public, in terms easily understood, the new educational environment that will result from the integration of technology and education. This is particularly important if you intend to use technology as a major component of a school restructuring effort.

HINT

The use of graphics can be of significant value when communicating your vision to the public.

Some of the more common questions you will hear from the public include:

- What will education look like?
- How will education in the state change because of your plan? What will be different?
- How will education remain the same after your plan is implemented?
- How will the school environment change? (For example, what will the school day or year now involve?)
- How is technology going to affect the education of individual children?
- How will you measure student achievement?
- How will technology affect the role of teachers?
- How will stakeholders be affected?
- How will educational technology help improve education in the state?
- How much will your plan cost, and is it worth the expense?
- How does the plan build on what already exists?
- What research exists to support the plan?
- How will you prove at some point in the future that you have done what you plan to do?

A good public relations campaign, including a strategic media plan, will help you achieve your vision. Public forums, such as town meetings and technology demonstrations, can be beneficial parts of this campaign. Activities at these meetings could differ according to the interests of the region of the state involved.

Each time you expose the public to the technology and your vision for it, you will come one step closer to gaining support and understanding. As one state planner put it, "support for the plan must begin with the grassroots."

- ***GOALS AND OBJECTIVES: What do you hope to accomplish through the use of educational technology in your state?***

One important task in the planning process is to clearly define your goals and objectives for educational technology. What you plan to accomplish will be limited by such factors as funding and human resources. You should consider these and other constraints when establish-ing your goals and objectives. Unrealistic promises can lead to doubts and a loss of support among your staff, teachers in the state, the legislature, and the voting public. If clearly defined, your goals and objectives will drive your remaining planning decisions.

Consider the following questions when establishing goals and objectives:

- How will technology support your state's educational goals?
- What do you want the state educational technology plan to do?
- What can you realistically hope to accomplish?
- What are your short-term and long-term goals?
- What are your instructional objectives?
- What are your administrative objectives?
- How will you link instructional and administrative objectives?
- What is your evaluation plan?
- What are your staffing needs?

HINT

Technology is most effective when it is used to fulfill an educational need or objective.

Goals and objectives need to be defined not only for the plan itself, but also for each of its sub-components. For example, as a sub-component of your state plan, your staff development program will require a clear set of goals.

Closely tied to your goals and objectives will be the evaluation criteria used to measure whether established goals and objectives have been met. For this reason, it is important to begin planning for the evaluation process while you are defining your goals and objectives. Of primary consideration is how you will know that you have reached your objectives. The use of an independent third party can help lend credibility to the evaluation process. (The

evaluation process is discussed more fully in Stage Three of this report.)

- ***NEEDS ASSESSMENT: What is your state's current status?***

A review of your state's current educational and technology status may help you determine your needs and focus your planning efforts. There are several things to consider when assessing your needs. These are:

- The varying technological sophistication of your state's school districts;
- The inventory of existing technologies and how they are being used;
- The ability and availability of staff to help you plan;
- The expertise of school district staffs to plan for educational technology;
- The impact state laws and mandates may have on your educational technology plan.

A review of existing state plans can be very helpful. The Southern Regional Education Board keeps a file of these and can help you obtain copies.

HINT

It is important to remember that educational technology is more than computers. Many technologies, such as telecommunications technologies, satellite networks, videodisc players, and closed-circuit cable TV systems could meet your needs. Have you addressed all technologies?

- ***SCOPE: What will your plan cover?***

A clearly defined scope for the plan will help eliminate unrealistic expectations. It is helpful to define what the plan will, and will not, cover. Your answers to the following questions may help define your plan's scope:

- Will the plan cover both instructional and administrative technologies?
- What technologies are to be covered by the plan?
- Will you ask school districts to draft their own technology plan? If so, will you provide school districts with guidelines for writing these plans?
- Should your plan define the technology standards for old as well as new facilities? How about old technologies?

HINT

Depending on your situation, it may be wise to plan simultaneously for instructional and administrative technologies, since these systems are becoming increasingly interdependent. For example, in an integrated system, these technologies can be used to efficiently produce accountability reports.

- ***POLITICAL ISSUES: How will you handle politics in your state?***

The potential cost of not investing in technology is great. Educational technology can be a significant investment, but it is one we must make without delay. Technology decisions will be a high profile issue in your state, and politics will play a key role throughout the planning process — from the selection of a planning committee to the method of distributing funds. Your knowledge of political dynamics can help you find ways to develop broad-based support for your plan. According to the experts, political considerations may influence:

- Your identification, selection, and involvement of stakeholders;
- Your methods for involving the public;
- The amount of freedom you grant school districts;
- Whether to use model schools.

- ***DEFINING STAKEHOLDERS: Who has a stake in educational technology planning?***

The identification of stakeholders is a major consideration for the educational technology planner. Stakeholders are people who may benefit from or be impacted by your plan's success. Stakeholders can either be a great source of support or a roadblock to progress. Experts agree that there are three things to remember when dealing with stakeholders — identify, inform, and involve.

When identifying stakeholders ask yourself:

- Who has the power to accept or reject the plan?
- Who can influence public acceptance of the plan?
- Who can help gain support for the plan?

There are many categories of stakeholders in a state. These may include:

- teachers
- parents
- governor
- higher education leaders
- libraries and museums
- chambers of commerce

- key legislators
- business leaders
- students (K - adult)
- educational unions and associations
- school board members
- special interest groups
- school administrators
- media personnel

Keeping stakeholders informed is critical to maintaining their support, whether you choose to communicate through meetings, newsletters, or personal correspondence. You may again find that a carefully planned public relations effort will be beneficial.

There are many ways to invite stakeholder participation. Their level of involvement may depend on personal interests, time limitations, and technical expertise. Whether a stakeholder serves on an advisory group, co-chairs a task force, or prefers simply to be kept informed of your progress, you must capitalize on his or her individual strengths to gain broader support for the plan.

- ***ORGANIZATIONAL STRUCTURE: How will you organize those involved in the planning?***

State educational technology planning can be a very complex task. You cannot plan in a vacuum, and you will need assistance. You must decide how best to manage and organize this assistance. There are many different alternatives — a large structure with several sub-committees and task groups or a small structure with one planning committee. For example, some states have used an existing state agency such as the state department of education to coordinate planning. Other states have formed a "Blue Ribbon Committee" made up of influential and respected citizens. Still others have established multiple advisory groups representing major stakeholders in the state to assist a core committee.

Different types of organizational structures have their merits. It is your challenge to choose the one that will be most effective and productive. When designing an organizational structure you may want to consider:

- How will you gain stakeholder input?
- How will you keep the organizational structure non-partisan?

- How will individuals be selected and what will their responsibilities be?
- What are the tasks you want to carry out?
- How will the input of all those involved be brought together?

- ***MODEL SCHOOLS: Will you formally recognize and support model schools?***

Many state plans mention model school programs, but use these programs in different ways. Experience tells us that in every state, some schools will be more successful with educational technology than others. So the question is not whether you will have model schools — but whether you will formally recognize and support model schools in your state. In some states, model schools have proven to be a good resource for training staff and showcasing successes to the public. If your model school program is not formalized, you may consider public recognition and awards as a means of identifying successful practices.

Choosing to formally institute a model school program in your state involves many issues. You may want to consider the following:

- What will you model?
- How many models will you have in the state? (You may consider one per region.)
- Will you have models for elementary, middle, and secondary levels?
- How will you choose the model schools? Will you use a competitive grant process?
- How will you provide for easy accessibility to model schools?
- How will you support model schools?
- What is the cost benefit of model schools?

- ***FUNDING: How and when will the plan be funded?***

Funding is critical to the success of your plan. States use different means, such as lotteries and taxes, to fund educational technology investments. However, it is important to consider not

only how the plan will be funded, but when it will be funded. Your plan will most likely progress in phases. Without the funding to complete each phase on time, the plan could be stalled and public support lessened. For this reason, it will be essential to determine the funding schedule.

- ***EQUITY: How will you promote equity, both in planning for educational technology and integrating it into education in your state?***

Equity is a critical consideration for the state educational technology planner. It can be defined in many ways, depending on your state's current status and objectives for education. You may, for example, define equity in terms of equal educational outcomes for students in your state's school districts. You might also define it in terms of an equal distribution of technology funds. However it is defined, equity must be considered when planning.

More and more frequently, states are investing in technology in response to equity lawsuits. Technology has the potential to promote equitable access and opportunity. For example, state networks can give all students access to the same resources, and Distance Learning can offer all students the opportunity to take the same classes. Without proper planning, however, investments in technology can further separate the "haves" and "have nots" in your state.

You may want to consider:

- How will funding be distributed? Will it be on a competitive basis?
- How will you help less advantaged school districts plan for and use technology?
- Will you have to allocate additional staff time for assistance?
- Do you hope to establish a standard minimal technology base in all schools?
- What will you do about those school districts that have already invested in technology?

● *STAFF DEVELOPMENT: What kinds of training considerations are needed for faculty and staff?*

Staff's ability and willingness to use technology depends on their familiarity and level of comfort with it. Staff development implies more than training — it also refers to professional growth.

States must plan for staff development. The educational technology planner must carefully consider how best to train staff to use technology effectively and how to provide staff with the guidance they need to adjust to a changing educational environment. Experience has shown that many factors make this task difficult, including the lack of time, money, motivation, and the capacity to provide for ongoing technical assistance within the schools.

When planning for staff's professional growth, you will need to address the following questions:

- Must the state's teacher evaluation criteria be updated to support the use of educational technology?
- How can teachers be given the time they need to prepare to use technology?
- Is there a medium that encourages peer communication among staff in your state?
- Would a state network that allows peers to exchange ideas be beneficial?
- How will technology impact education?
- How will the addition of technology change the way students are taught?

Experts offer the following suggestions to make training more effective:

- Train staff in their own building, on their own equipment, to meet their own needs
- Schedule most training when technology is in place
- Plan for training to be continuous

HINT

Teachers must not only know how to use various technologies, but also must have a clear understanding of how technology changes the learning process. Staff development should be used to help teachers develop teaching strategies and to explore the impact technology will have on their teaching methods.

HINT

Administrators will need training as well. With the addition of new technologies, administrators will need to know the pros and cons of various technologies, how to determine whether desired learning outcomes have been reached, and how to use technology to run their buildings.

- ***VENDORS AND OUTSIDE CONSULTANTS: How can you establish a beneficial relationship with vendors and consultants?***

Vendors and consultants can help to ensure the success of your plan. However, before involving vendors and consultants in the planning process, decide what you want them to do. If beneficial relationships are established, vendors and consultants can be good sources of helpful information and advice, while ultimate planning decisions are made by the state. Ask yourself these questions before involving vendors and consultants:

- How will you evaluate hardware, software, and staff development?
- How will you deal with maintenance and replacement issues?
- Are state contracts and procurement a good strategy for your state, or would local level procurement be better?
- Would volume purchasing reduce your costs?
- Would leasing some items be beneficial?

STAGE TWO: WRITING

There is no one way to write a plan. It will require much time and effort. The plan will be your principle means of communicating educational technology goals to decision makers and the public. For this reason, it should be organized and clear. Diagrams and illustrations can be used to effectively explain complex concepts not commonly understood by the general public.

Experts have identified several key elements generally included in educational technology plans:

Vision: The picture you will paint for the public. What will the classroom look like when technology has been introduced?

Mission Statement: An outline of challenges and an explanation of intended actions.

Goals and Objectives: An identification of your expectations.

Strategy: A statement of how you plan to accomplish your goals and objectives.

Scope: The limits of your plan.

Training and Staffing Requirements: A description of the human resources and training necessary to successfully implement your plan.

Evaluation Criteria: Tools and techniques for judging the success of your plan.

Technical Standards: The minimum requirements for each technology to be purchased.

Cost Estimates: A forecast of your plan's cost.

Timeline: A schedule outlining the steps of the plan with timetables for completion.

Glossary of Terms: Definitions of technical jargon.

Upgrading, Maintenance, and Obsolescence Strategies: These strategies may be developed as a result of contract negotiations with vendors. For example, a replacement schedule forecasting anticipated replacements for outmoded hardware might be included.

HINT

Some additional sections that have been successfully added to some state plans include: "Answers to Frequently Asked Questions" and "A Directory of Contact Phone Numbers".

STAGE THREE: EVALUATING

- ***EVALUATION: How will you judge the effectiveness of your plan?***

A regularly scheduled evaluation of the plan, at least every 12 months, can help you monitor successes and remain on target. To lend credibility to the evaluation, you may consider the use of an independent third-party reviewer. A major concern is the plan's ability to reach established objectives and goals. Given changes in the education environment and new technological developments, you may find it necessary to change your plan periodically. Thus, you may want to consider how changes to the plan can be made and who can make and authorize these changes.

As mentioned in Stage One of this report, your evaluation criteria should be established simultaneously with your goals and objectives. This will help significantly when you begin measuring your plan's successes. Establishing evaluation criteria before evaluating the plan not only leads to a more accurate assessment of the plan's effectiveness, but is also another way to achieve credibility

with the public, since they will know up front what the plan is intended to achieve.

For your evaluation to be effective, you will need a way to collect the data and information that you need. You may, for example, want to collect status reports from each school district or from each school. This will require a certain degree of organization and staff time. You must plan accordingly.

An important product of any evaluation is learning under what conditions different technologies work best. This will be extremely helpful in planning staff development efforts and assisting districts in their planning efforts.

SUMMARY: TIPS FROM THE EXPERTS

The purpose of this document has been to guide the efforts of those involved in state educational technology planning. It has done its job if you were: Forced to question the way you plan; stimulated to think of something you had not previously considered; or motivated to become more actively involved in educational technology planning in your state.

Finally, state educational technology planning experts offer the following advice:

- Be prepared when you face the legislature. (Know where you have been; where you plan to go; and what is happening in other states.)
- To further illustrate its potential, use technology to present your plan, but do not let technology become the focus of your presentation.
- Expect to make changes to your plan. (Build in flexibility and be prepared to make many tradeoffs before reaching your objectives.)
- Be creative when seeking solutions to problems.
- Consider all your options — not just the first or most apparent.
- Borrow from what has been done before. (For example, review the plans of other states and take advantage of commercially de-

HINT

It is important to remember that technology needs to be in place before training can begin. If individuals are trained before equipment is installed, chances are the training could be forgotten.

veloped planning instruments, etc. Consult the attached List of Resources for such products.)

- Plan for unexpected developments. (Always be ready with a Plan B.)
- Use graphics to illustrate concepts in your plan.
- Showcase and build upon your successes.
- Involve all stakeholders as appropriate.
- Plan with the future in mind. (Rapid changes in the information industry may require you to incorporate a completely new technology into the plan.)
- Use pilots only if you know you can be successful.
- Build training and funding into a realistic timeline.
- When beneficial, seek partners from industry and higher education.
- Present your plan to the legislature in segments if it has a better chance of approval than if presented as a whole. (Some states have had their entire educational technology initiative "wiped out" by the legislature because one element was not acceptable. If it had been presented in pieces, the other parts of the plan might have been approved.)
- Consider all sources of funding as resources for educational technology.
- Plan for maintenance and upgrading of obsolete equipment and materials.

HINT

Keeping higher education and industry involved in or aware of your plan can prove very helpful. This interaction could lead to collaborative efforts benefiting your state in the future. For example, working with colleges of education may help them better prepare future teachers to meet your state's expectations for teaching with technology.

Checklist

Does Your Plan ...

- ✔ Coincide with state educational goals and mandates?
- ✔ Address the issue of state accountability requirements?
- ✔ State a means for using technology for student achievement and reports of progress?
- ✔ Address both instructional and administrative technology?
- ✔ Designate a central authority for its implementation and evaluation?
- ✔ Define the school and district roles in making the plan work?
- ✔ Include a staff training and development component?
- ✔ Have a mechanism built in for change?
- ✔ Show a link between your educational objectives and technology?
- ✔ Address equity?
- ✔ Address upgrades, obsolescence, and maintenance?
- ✔ Address the need for a technology facilitator/team in the schools?
- ✔ Allow for an ongoing review and reporting process?
- ✔ Establish a reasonable timeline and scope?

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- **Geoff Fletcher,** Associate Commissioner, Technology Applications, the Texas Education Agency
- **Linda Leatherbury,** President, Baron Leatherbury, Inc.

List of Resources

PLANNING RESOURCES:

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National Education Association. *Educational Telecommunications: Final Report of the NEA Committee on Educational Telecommunications.* America: NEA, 1993.

Sheehan, Bernard S. "Planning for Information Technology." *New Dimensions for Institutional Research* Sept. 1982: 105-116.

COMMERCIALLY DEVELOPED TOOLS:

Teaching, Learning & Technology: A Planning Guide. Apple Computer, Inc. 1991. (multimedia planning kit)

K-12 Technology Planning Tool. EduQuest. 1992. (multimedia planning kit)

ORGANIZATIONS AND CONTACTS:

- **Agency for Instructional Technology**
  Box A, Bloomington, IN 47402-0120
  Phone: (812) 339-2203 FAX: (812) 333-4218
- **Association of College and University Telecommunications Administrators (ACUTA)**
  Lexington Financial Center, Suite 2420, Lexington, KY 40507
  Phone: (606) 252-2882
- **Center for Technology in Education**
  Bank Street College of Education,
  610 West 112th Street, New York, NY 10025
- **CAUSE, the Association for the Management of Information Technology in Higher Education**
  4840 Pearl East Circle, Suite 302 E, Boulder, CO 80301-6114
  Phone: (303) 449-4430 FAX: (303) 440-0461
- **Council of Chief State School Offficers (CCSSO)**
  One Massachusetts Avenue, NW, Suite 700
  Washington, DC 20001
  Phone: (202) 408-5505
- **Hezel Associates**
  1201 East Fayette Street, Syracuse, NY 13210
  Phone: (315) 422-3512 FAX: (315) 422-3513

- **Institute for Academic Technology (IAT)**
  P.O. Box 12017, Research Triangle Park, NC 27709-2017
  Phone: (919) 560-5031 FAX: (919) 560-5047
- **Institute for the Transfer of Technology to Education (ITTE)**
  National School Boards Association, 1680 Duke Street
  Alexandria, VA 22314
  Phone: (703) 838-6794 FAX: (703) 683-7590
- **International Society for Technology in Education (ISTE)**
  P.O. Box 4437, Alexandria, VA 22303
  Phone: (703) 351-5243 FAX: (703) 351-5254
- **International University Consortium for Telecommunications and Learning**
  University of Maryland
  University College, University Boulevard at Adelphi Road
  College Park, MD 20742-1612
  Phone: (301) 985-7811
- **Mecklenburger Group**
  P.O. Box 22075, Alexandria, VA 22304
  Phone: (703) 823-6853 FAX: (703) 823-6819
- **National Center for Technology Planning (NCTP)**
  Mississippi State University
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  Voice: (601) 325-2281 FAX: (601) 325-7599
  E-Mail: lsa1@ra.msstate.edu
- **Software Publishers Association**
  1730 M Street NW, Suite 700, Washington, DC 20036
  Phone: (202) 452-1600
- **Southern Regional Education Board**
  592 Tenth Street, NW, Atlanta, GA 30318-5790
  Phone: (404) 875-9211 FAX: (404) 872-1477

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